

8. Chloromethyl-chloroformate (Palite), $\text{ClCOOCH}_2\text{Cl}$ (shell).
9. Nitro-trichloro-methane (Chloropicrin or nitrochloroform), CCl_3NO_2 (shell).
10. Chlorosulfonic acid, $\text{SO}_3\cdot\text{H}\cdot\text{Cl}$ (hand grenades and "smoke pots").
11. Dichloro-diethylsulfide (mustard gas), $(\text{CH}_2\text{ClCH}_2)_2\text{S}$ (shell).
12. Dimethyl sulfate, $(\text{CH}_3)_2\text{SO}_4$ (hand grenades).
13. Diphenyl-chloro-arsine, $(\text{C}_6\text{H}_5)_2\text{AsCl}$ (shell).
14. Dichloromethyl ether, $(\text{CH}_2\text{Cl})_2\text{O}$ (shell).
15. Methyl-chlorosulfonate, CH_3ClSO_3 (hand grenades).
16. Phenyl-carbylamine chloride, $\text{C}_6\text{H}_5\text{NCCl}_2$ (shell).
17. Phosgene (carbonyl chloride), COCl_2 (cloud and shell).
18. Sulfur trioxide, SO_3 (hand grenades and shell).
19. Trichloromethyl-chloroformate (Diphosgene, superpalite), ClCOOCCl_3 (shell).
20. Xylyl bromide (tolyl bromide), $\text{CH}_3\text{C}_6\text{H}_4\text{CH}_2\text{Br}$. (shell).

BOTANY.—*Blepharidium*, a new genus of Rubiaceae from Guatemala.¹ PAUL C. STANDLEY, U. S. National Museum.

In the U. S. National Herbarium there are specimens of a striking rubiaceous plant, hitherto undescribed, collected in Guatemala by Mr. Henry Pittier. Some years ago this material was examined by Captain John Donnell Smith, who concluded that it probably represents an undescribed genus. Recently, while preparing an account of the Rubiaceae for the North American Flora, the writer has studied the material and has arrived at the same conclusion. Among North American representatives of the family the plant is noteworthy because of its large, long-petiole leaves and of its large flowers, borne in peculiar 3-flowered cymes. Its general appearance does not definitely associate it with any of the known genera, and its floral details are such as to necessitate its recognition as a new genus, for which the name *Blepharidium* is here proposed.

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Blepharidium Standley, gen. nov.

Shrubs or trees, with subterete branchlets. Leaves opposite, petiolate, the blades large, chartaceous. Stipules intrapetiolar, large, thin, acuminate, entire, caducous. Flowers large, pedicellate, bibracteolate, in 3-flowered cymes, the cymes axillary, long-pedunculate; calyx-tube obovoid, the limb large, prolonged beyond the ovary, 4-lobate, the lobes very broad, imbricate, ciliolate; corolla salverform, coriaceous, the tube slender, elongate, densely villous within except near the base, the limb 4-lobate, the lobes broad, spreading, imbricate in bud, one of them exterior. Stamens 4, inserted in the throat of the corolla; anthers sessile, dorsifixed below the middle, linear, obtuse, included. Disk annular. Ovary 2-celled; style filiform, included, the stigma bilobate, the lobes linear, elongate, acute; ovules numerous, imbricate, winged, the placentae attached to the septum.

Type species, *Blepharidium guatemalense* Standley.

Blepharidium guatemalense Standley, sp. nov.

Branchlets stout, green, glabrous, sparsely whitish-lenticellate, the internodes elongate; stipules ovate-triangular, 2-2.5 cm. long, acuminate or cuspidate-acuminate, brown, glabrous outside, within sericeous-pilose at the base and bearing numerous glands; petioles stout, 2.5-5 cm. long, glabrous; leaf-blades oval-oblong, 17-30 cm. long, 8-14.5 cm. wide, obtuse or acute at the base, obtuse or acute at the apex, concolorous, glabrous above, the costa impressed, the other venation prominulous, sparsely short-pilose beneath along the prominent costa, the lateral veins prominent, about 8 on each side, arcuate-ascending; peduncles 3-flowered, slender, 7-21 cm. long, glabrous, the pedicels stout, 0.3-2 cm. long; bracts foliaceous, oval, about 1 cm. long, the bractlets broadly ovate, 3-4 mm. long, deciduous; calyx glabrous, the tube 4-5 mm. long, the limb 4-5 mm. long, 7-8 mm. broad, the lobes half as long as the tube, broader than long, rounded or truncate, minutely ciliolate; corolla-tube about 6 cm. long, 4-5 mm. thick, glabrous outside, the lobes oval, about 1 cm. long; anthers 7 mm. long; stigma-lobes 6-7 mm. long.

Type in the U. S. National Herbarium, no. 472925, collected in forest along Saklak River, below Secanquim, Alta Verapaz, Guatemala, altitude 300 meters, May 7, 1905, by Henry Pittier (no. 266).

Blepharidium is evidently a member of the Cinchoneae, for although mature fruit, upon which the classification of the Rubiaceae is chiefly based, is not available for study, the large, imbricate, winged ovules are characteristic of this tribe alone. Within the tribe, however, it is not easy to determine the exact position of the genus. In most published keys to the subgroup, it would fall near *Exostema*, but it does not appear to be very

closely allied to that genus, in which the anthers are borne on long filaments. By the sessile anthers *Blepharidium* is easily distinguished from all the genera of the Cinchoneae with imbricate corolla lobes.

ZOOLOGY.—*A key to the Philippine subspecies of Obba marginata with notes on their distribution.*¹ PAUL BARTSCH, U. S. National Museum.

The preparation of a report on the Philippine Island land shells reveals so many distributional gaps in the material available for study that it seems wise to publish a series of synopses in the form of keys to the various groups as the work progresses, together with a brief account of the zoogeographic facts presented by the data at hand

It is hoped that these sketches may serve to stimulate collectors to bestow their efforts upon localities from which material is sadly needed to render the monographic reports complete.

OBBA MARGINATA Müller

In this species the shell varies from broadly conic (*Obba marginata mearnsi*), to almost lenticular (*Obba marginata samarensis*). The range in size is also great. *Obba marginata saranganica* attains a greater diameter of 35 mm., while in *Obba marginata mearnsi* it does not exceed 19 mm. All the races have a narrow acute peripheral keel to which the summit of the succeeding turn is appressed. The ground color varies from pale buff (*Obba marginata griseola* and *Obba marginata mearnsi*), to pale brownish (*Obba marginata marginata*). In all the subspecies known, the peripheral keel and the extreme summit are edged by a very narrow white or whitish zone, while the rest of the upper surface of the turns is marked by three bands of brown of which one adjoins the peripheral white zone while another bounds the white line at the summit and the third occupies a space almost midway between them. The width of these brown bands varies in the different races. In some they equal the light areas that separate them (*Obba marginata batutensis*), while in others some of them are represented by mere hair lines. The intensity of the color may be the same or may vary in the different bands on the same whorl, the band at the summit being usually much paler than the rest. Two bands are present on the basal sides of all the members of this species, one adjoin-

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